Title. Supply and Demand Effects of COVID-19 under Financing Constraints: Firm-Level Panel Evidence from Italy

Authors:
Pierluigi Balduzzi, Boston College, balduzzp@bc.edu
Emanuele Brancati, Sapienza University, emanuele.brancati@uniroma1.it
Marco Brianti, Boston College, brianti@bc.edu
Fabio Schiantarelli, Boston College and IZA, schianta@bc.edu

Abstract. This paper takes advantage of panel data to explore the effect of financial constraints on firms’ expectations during the COVID-19 pandemic. We exploit a special survey of Italian firms conducted in March 2020, after the implementation of lockdown policies, matched with pre-COVID-19 survey data collected in January 2020, right before the outbreak of the epidemic. We focus on firms’ expected future sales (both in the short and medium run), prices, as well as orders, employment, and investment. We show that the pandemic shock induces a fall in expected sales (and factor demand), as well as an increase in future prices suggesting that the supply component of the shock may be dominant. Firms’ financing constraints play a very important role in the transmission of this shock, inducing a significant worsening of employment, investment, and sales expectations. Financial constraints also put significant additional upward pressure on expected future prices. Our results also emphasize the role of liquidity in helping firms to weather the storm.

Data description. Our main source of data is a specific survey designed to explore the consequences of the COVID-19 pandemic, which we combine with the information from the 2019 wave of the MET survey of the Italian industrial system and balance sheet information from CRIF-Cribis D&B database. Unlike other surveys, MET provides information on every size class including micro-sized companies with less than ten employees. The survey is fully representative for the manufacturing sectors (60% of the sample) and the production-service industry (40%). Coherently with the timing of the previous waves, the administration of the 2019-survey ended in mid-January of the following year, right before the outbreak of the COVID-19 pandemic for Italy (late February 2020). This unique characteristic makes the 2019-wave of the MET survey the only available data providing a comprehensive snapshot of firms' conditions in entering the Coronavirus-induced crisis. We complement the information in the original questionnaire with an ad hoc survey specifically conceived to study the effect of COVID-19 pandemic. The survey was administered to the entire sample of respondents of the 2019-wave, so to have full information on the pre COVID-19 situation of each company. Because we did not want to have excessive variation in the information set of the respondents, we restricted the timing of the survey to a 2-week window between March 24 and April 7 2020. Administration started 13 days after the generalized lockdown and other measures imposed by the Italian government (March 11), so to leave each firm enough time to update its beliefs and to evaluate adjustments in the production processes/strategies. At the same time, not much additional information was revealed within this short-time window, guaranteeing that responses are neither due to changes in the measures imposed by the government nor updated beliefs on the severity of the COVID-19 pandemic. The survey is composed by three main blocks. The first set of questions is formulated in the same way of the original questionnaire so to have an exact correspondence and facilitate the analysis of the effect of COVID-19 on the answer of firms' expectations and behavior. In particular, the survey asks about expectations on future sales and expected changes in future prices, and whether R&D investment are scheduled for the next year (2020-2021). A second block of questions directly asks about firms' expectation following the COVID-19 pandemic on several dimensions: sales growth in the following three and 12 months, as well as new orders, inventories, export sales, number of workers employed, expenditure
in tangible investments, expenditure in R&D projects, and expenditure in other intangible investments, all pertaining to the following 12 months. Finally, an additional section investigates different dimensions in the effect of COVID-19 and how firms reacted to it including detailed questions about the response in terms of hours and employment, teleworking, partial or complete company shutdown, and re-arrangement of the supply chain. The survey ended with a remarkable response rate, with a final amount of completed interviews for about 7,800 companies. In addition to the firm-level survey data, we have also used balance-sheet data from the CRIF-Cribis D&B database. Finally, we have gathered data on the diffusion of the COVID-19 pandemic from official releases of the Italian Department of Civil Protection (Presidency of the Council of Minister). The information is available at a daily frequency from February 24 till most recent days and regards: the cumulated total amount of positive cases, (given by the sum of hospitalized patients and number of people in official home confinement) number of hospitalized patients with symptoms, hospitalized people in intensive care, total number of hospitalized patients, people in official home confinement, new positive cases, recovered patients, change in the net number of positive cases, number of deaths, and cumulated number of tests performed.

**JEL codes.** E2, E3, G30, I10

**Key words.** COVID-19, pandemic, firms’ expectations, firms’ plans, credit constraints, prices, employment, investment, sales, orders